

US EPA ARCHIVE DOCUMENT

WILLCO BUILDING DEMOLITION WORK PLAN FOR THE CARTER CARBURETOR SUPERFUND SITE

Prepared for:

ACF Industries LLC
101 Clark Street
St. Charles, Missouri 63301

Prepared by:

HRP *Associates, Inc.*
111 Westport Plaza Drive, Suite 615
Saint Louis, MO 63146

Project No. ACF0001.RA

August 25, 2014

HRP *Associates, Inc.*

IMPORTANT NOTICE

This report was prepared exclusively for ACF Industries, LLC. by HRP Associates, Inc. The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in HRP's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by only, subject to the terms and conditions of its contract with HRP. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

WILLCO BUILDING DEMOLITION WORK PLAN

WILLCO Building Demolition Work Plan for the Carter Carburetor Superfund Site St. Louis, Missouri

REVIEW AND APPROVALS:

Prepared by:



Eric J. Boswell, LEP, PG
Project Manager

8/25/2014

Date



Gwen D. Williamson, PE, LEED AP BD+C
Senior Project Engineer

8/25/2014

Date

Reviewed by:



Thomas R. Battles, PE
Director of Civil Engineering

8/25/2014

Date




Howard S. Hurd, COO, CPG, LEP
QA Reviewer

8/25/2014

Date

Approved by:



Eugene M. Watson, CHMM
Program Director

8/25/2014

Date

Jeff Weatherford, Project Manager
U.S. EPA, Region 7

Date

WILLCO BUILDING DEMOLITION WORK PLAN

TABLE OF CONTENTS

Section	Page
Abbreviations and Acronyms.....	iv
1.0 INTRODUCTION	1-1
1.1 Background.....	1-1
2.0 SEQUENCE OF OPERATIONS.....	2-1
2.1 Pre-Demolition Activities.....	2-1
2.2 Detailed Description of Demolition Process	2-1
2.3 Control Measures.....	2-1
3.0 SITE MOBILIZATION.....	3-1
4.0 QUALITY ASSURANCE SAMPLING & ANALYSIS PLAN	4-1
5.0 PRE-DEMOLITION ACTIVITIES.....	5-1
5.1 Asbestos Abatement.....	5-1
5.2 Universal Waste Removal.....	5-2
5.3 Equipment Mobilization.....	5-2
5.4 Entry and Exit Procedures	5-2
5.4.1 WILLCO Building Pre-Demolition.....	5-2
5.4.2 WILLCO Building Demolition	5-2
5.4.3 Decontamination and PPE.....	5-2
5.4.4 Non-Structural Component Removal	5-3
5.5 Utility Abandonment.....	5-3
5.6 Establish Dust Control	5-3
5.7 Dust Suppression Water Management	5-4
5.7.1 MSD Owned Sewers	5-4
5.7.2 Private Sewers.....	5-4
5.7.3 Surface Water.....	5-4
6.0 DEMOLITION.....	6-1
6.1 Demolition Material Management	6-1
6.1.1 Feed Material.....	6-1
6.1.2 Stockpile Management	6-2
6.2 Dust Control during Demolition	6-3
6.3 Road Closures (see CBI Demolition Work Plan)	6-3
6.3.1 North Spring Avenue	6-3
6.3.2 Saint Louis Avenue.....	6-3
7.0 CRUSHER OPERATIONS.....	7-1
7.1 Crusher Location	7-1
7.2 Operations	7-1
7.3 Dust Control.....	7-1
8.0 TRANSPORTATION AND DISPOSAL.....	8-1
8.1 Material Loading	8-1

WILLCO BUILDING DEMOLITION WORK PLAN

8.1.1	Off-site Transportation	8-1
8.1.2	On-Site Transportation.....	8-1
8.2	Truck Scale.....	8-2
8.3	Visual Inspection.....	8-2
8.4	Truck Wash.....	8-2
8.5	Public Road Inspection	8-3

WILLCO BUILDING DEMOLITION WORK PLAN

List of Tables

None

List of Figures

Figure 1-1 Site Layout
Figure 4-1 Site Utility Locations
Figure 5-1 WILLCO Building Bay Numbering

List of Appendices

A Proposed Project Schedule

WILLCO BUILDING DEMOLITION WORK PLAN

ABBREVIATIONS AND ACRONYMS

ACF	ACF Industries, LLC
AOC	Agreement Order on Consent
ASA	Administrative Settlement Agreement
AOC	Administrative Order on Consent
CBI	Carter Building, Inc.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
cm	centimeter
CoC	contaminant of concern
CY	cubic yards
DWP	demolition work plan
EECA	Engineering Evaluation Cost Analysis
EPA	US Environmental Protection Agency
ft	foot (or feet)
ft ²	square feet
HRP	HRP Associates, Inc.
LRA	Land Reutilization Action of the City of St. Louis
HASP	Health and Safety Plan
MDNR	Missouri Department of Natural Resources
mg/kg	milligram per kilogram
mg/L	milligram per liter
MSD	Metropolitan St. Louis Sewer District
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
POTW	publicly owned treatment works
PPE	personal protective equipment
RAWP	Removal Action Work Plan
RC	reinforced concrete
RCRA	Resource Conservation and Recovery Act
Site	Carter Carburetor Superfund Site
SOW	Scope of Work
TCE	trichloroethylene
TCLP	toxicity characteristic leachate procedure
TSCA	Toxic Substances Control Act
TSDF	treatment storage and disposal facility
USC	United States Code
WCT	Water Collection Tank

WILLCO BUILDING DEMOLITION WORK PLAN

1.0 INTRODUCTION

The purpose of the WILLCO Building Inc. (WILLCO) Demolition Work Plan (DWP) is to document the scope of work (SOW) to be executed to meet the guidance provided in Administrative Settlement Agreement (ASA) and Administrative Order on Consent (AOC) CERCLA 07-2013-0008 for the Carter Carburetor Superfund Site. Specifically, the WILLCO DWP was prepared in accordance with Section III Tasks paragraph A.2 Addendum B – CBI Building Work Plan Addendum and NOT in accordance with any specific ACF Industries, LLC (ACF) Addendums for the Carter Carburetor Superfund Site.

This plan describes in detail the activities required for the successful demolition of the WILLCO Building (Site);

- Pre-demolition activities,
- Sampling and disposal of materials not scheduled for re-use as backfill on-site
- Dust control methods,
- Fugitive dust sampling,
- Sizing of the demolition debris for use as backfill,
- Sampling of the demolition debris stockpiles
- Stockpile management
- Disposal of demolition debris not suitable for on-site re-use

The Site Layout, Figure 1-1 depicts the expected layout of the Site to include the placement of equipment, stockpiles and water management apparatus. The layout is based on existing conditions and expected equipment and space needed for stockpiled materials.

A proposed schedule, based on this DWP, for the demolition of the WILLCO Building is included as Appendix A.

1.1 Background

The WILLCO Building is a two (2) story building located on a site bounded by North Grand Boulevard on the west, St. Louis Avenue on the south, North Spring Avenue on the west, and Dodier Street on the north. The WILLCO building front is on the west side of the 2800 block of North Grand Boulevard, immediately adjacent to St. Louis Avenue. The WILLCO Building is a reinforced concrete (RC) framed structure with an approximate overall dimension of 188 feet (ft) by 135 ft; with an actual footprint of approximately 25,350 square feet (sq ft). The second floor footprint is identical to the first floor. The RC columns are spaced on approximately 25 foot centers. The second floor slab appears to be a monolithic pour, with no beams/joists apparent. Where penetrated, the thickness of the first floor slab was on the order of eight (8) inches thick, and the second floor slab is on the order of 6 inches thick.

WILLCO BUILDING DEMOLITION WORK PLAN

The WILLCO Building was constructed adjacent and connected to the CBI Building. The columns within the WILLCO Building separate the building into forty-two (42) bays on both the first and second floors. While the WILLCO Building and the CBI Building are connected, they are independent structures.

As described in the Engineering Evaluation and Cost Analysis (Section 2.0: Site Characterization) prepared for the Carter Carburetor Superfund Site, the WILLCO Building was found to contain insignificant concentrations of PCBs in the floor slab, with the maximum concentration detected less than 6 milligrams per kilogram (mg/kg) or ppm.

Although the recommended alternative within the EE/CA was to clean the portions of the floor slab where PCBs were found in concentrations above 1 mg/kg and leave the building standing, the demolition and disposal of the WILLCO Building is also considered a viable alternative. Due to recent changes in future site plans, the demolition of the WILLCO Building will meet the removal action goals for the Site and while still protective of human health and the environment.

WILLCO BUILDING DEMOLITION WORK PLAN

2.0 SEQUENCE OF OPERATIONS

This section provides an overall strategy for the demolition of the WILLCO Building and a framework for the remainder of this WILLCO DWP. Work will be sequenced and executed in a safe and efficient manner and according to all applicable regulations, including but not limited to, 29 CFR Part 1926.

2.1 Pre-Demolition Activities

There are several activities that must be performed prior to the start of structural demolition of the WILLCO Building. The order in which the activities are listed is not indicative of the order in which they are completed. Some of the activities have already been completed, as indicated below. The activities are:

- Obtain a Demolition Permit;
- Mobilize Personnel and Equipment;
- Universal Waste Removal and Disposal – Will be completed as of October 3, 2014;
- Asbestos Abatement and Disposal – field operations to begin on or about September 8, 2014 and scheduled to be completed in October 2014;
- Utility Abandonment;
- Non-Structural Component Removal; and
- Dry Ice Blasting and Power Wash.

2.2 Detailed Description of Demolition Process

The detailed description of demolition process is provided in Section 5.0 of this WILLCO DWP. Specific details to be discussed are:

- Sequence of Demolition;
- Demolition Technique;
- Demolition Material Management; and
- Road Closures.

2.3 Control Measures

The following is a list of control measures to be discussed in this CBI DWP:

- Entry and Exit Procedures;
- Dust Control for:
 - Material Movement Activities
 - Crusher Operations
 - Demolition Activities
- Dust Suppression and Surface Water Runoff Management.

WILLCO BUILDING DEMOLITION WORK PLAN

3.0 SITE MOBILIZATION

HRP will perform a pre-demolition inspection and retain video/photographic documentation of the existing site conditions, including the surrounding sidewalks and roadways, prior to commencement of Site demolition activities. Additionally, any equipment mobilized to the Site will have a safety inspection performed and documented by the HRP Site Health and Safety Coordinator and a representative from the demolition contractor to ensure the equipment is functioning correctly and all safety devices are properly installed and functioning as designed.

Major equipment anticipated to be mobilized for the demolition of the WILLCO Building includes, but is not limited to:

- Tracked Excavator with Hydraulic Hammer;
- Tracked Excavator with Hydraulic Shear;
- Tracked Excavator with Bucket and Thumb;
- Mini Excavator;
- Wheel Loader(s);
- Dump Truck(s);
- Truck Scale;
- Decontamination Area;
- Mobile Crusher Plant;
- Aerial Lift(s);
- Water Storage Tank(s);
- Water Truck or similar;
- Wastewater Treatment System;
- Miscellaneous hand tools to include cutting torches;
- Storage Containers; and
- Mobile Office (shared with CBI Demolition).

WILLCO BUILDING DEMOLITION WORK PLAN

4.0 QUALITY ASSURANCE SAMPLING & ANALYSIS PLAN

The PCB results from concrete sampling in the WILLCO Building during the EE/CA investigation indicated PCB contamination in concrete core samples were much lower in concentrations than the CBI Building, with the highest reading at 5.91 ppm (see the Engineering Evaluation/Cost Analysis, September 2010). Field samples will be collected and analyzed to demonstrate and confirm that the WILLCO Building does not have total PCB impacts greater than the 25 mg/kg (ppm) in the concrete, brick or building demolition debris. Cleanup goals for each area at the Site were established in the SRE and also include regulatory levels for PCBs. Based on the low PCB impacts within the concrete in the WILLCO Building, the entire structure will be demolished, resized, segregated and stored west of North Spring Avenue in the "Area for Processed Material Stockpiling" for distribution across the Site at a later time. The concrete slab on grade will be left intact.

All Quality assurance and quality control (QA/QC) measures will be implemented through the CBI Demolition Work Plan (see **CBI Demolition Work Plan**) in an effort to maintain quality and evaluate the usability of the analytical results.

5.0 PRE-DEMOLITION ACTIVITIES

Prior to the physical deconstruction of the WILLCO Building, the following activities must be accomplished and verified complete:

- Asbestos Abatement; and
- Universal Waste Removal.

These activities will be described in detail in the following sections. Other pre-demolition activities that will be accomplished prior to the beginning of physical deconstruction of the WILLCO Building include:

- Equipment Mobilization;
- Non-Structural Component Removal;
- Utility Abandonment;
- Establish Dust Control Measures;
- Dust Suppression Water Management;
- Surface Water Runoff Management; and
- Establish Stockpile Management Locations and Final Stockpiles.

5.1 Asbestos Abatement

Asbestos abatement activities are scheduled to start on or about September 8, and will continue to be performed in accordance with the Asbestos Abatement Work Plan for the Carter Carburetor Superfund Site (Asbestos Abatement Work Plan, Addendum for WILLCO Building) and will conclude in October 2014.

WILLCO BUILDING DEMOLITION WORK PLAN

5.2 Universal Waste Removal

A Universal Waste Survey will be completed by October 3, 2014 by HRP personnel.

5.3 Equipment Mobilization

Equipment will be mobilized at the beginning of the WILLCO Building demolition on as needed basis due to the limited area of the Site. Equipment may be stored on the west side of North Spring Avenue inside the fenced area, if cleared in advanced with the Site Supervisor. Heavy equipment mobilization will be coordinated with the demolition contractor and Site Supervisor to minimize impact to local businesses and traffic. Some equipment may require assembly on-site. Assembled equipment will be inspected and tested to ensure a safe working condition and that all safety apparatus' are in place and functioning as designed. Equipment operators will be competent, experienced and properly trained.

5.4 Entry and Exit Procedures

Site Access Control is discussed in detail in Section 5.6 of the RAWP. Site Access will be controlled to prevent unauthorized access to the Site in accordance with the RAWP.

5.4.1 WILLCO Building Pre-Demolition

Entry and exit into and out of the WILLCO Building for Pre-Demolition Activities will be made through the rollup door on the southeast side of the WILLCO Building.

In the event of an emergency during pre-demolition activities, any exit from the WILLCO Building on the first floor is acceptable. All personnel will meet at the rally point (Site Administrative Area) to ensure all registered personnel on-site are accounted.

5.4.2 WILLCO Building Demolition

Once structural demolition commences, **no personnel** will be allowed in the standing structure of the WILLCO Building. The Site Health and Safety Coordinator, in conjunction with a licensed Structural Professional Engineer (PE) registered in the State of Missouri, will determine when Site personnel can access the first floor slab during demolition activities for inspection activities or to traverse across the Site east to west through the WILLCO Building slab.

5.4.3 Decontamination and PPE

Refer to CBI Building Demolition Work Plan, **Section 5.6.3**, for procedures addressing decontamination and PPE.

WILLCO BUILDING DEMOLITION WORK PLAN

5.4.4 Non-Structural Component Removal

Refer to CBI Building Demolition Work Plan, **Section 5.7**, for Non-Structural Component Removal procedures involving lead-based paint, PCB sampling of various substrates and disposition.

5.5 Utility Abandonment

A geophysical survey was performed to locate all underground utilities within the work area perimeter. This action was performed to ensure that utilities to the WILLCO Building have been terminated prior to the start of demolition activities. To date, no utilities with the exception of electrical power have been terminated. The geophysical survey has been incorporated with the topographic survey and is included in the DWP as **Figure 4-1**, Utility Locations.

HRP and the demolition contractor, when selected, will disconnect and properly terminate all existing utility lines as required for building demolition. Based on the data provided by the geophysical survey and the Missouri One Call service, the utilities that require abandonment prior to beginning demolition activities are natural gas, water, and sewer.

Laclede Gas will be contacted to terminate the gas lines supplying the WILLCO Building. The St. Louis Metropolitan Sewer District (MSD) will be contacted to determine how to isolate their sewers, and City of St. Louis will be contacted to terminate the water connections for the WILLCO Building.

5.6 Establish Dust Control

Dust control will be performed with water either in the form of a mist or direct spray at the point of dust generation, typically the point of building demolition. However, given the operations expected at the Site, several other point sources of dust generation will exist. The specific point sources of dust generation are as follows:

- Crusher Plant Feed and Crusher Area;
- Crusher Plant Discharge;
- Stockpiling;
- Movement of Stockpiles; and
- Equipment Movement on the Site.

It is anticipated that fire hydrants surrounding the Site will be utilized as a ready source of water for dust suppression. Final determination for the use of fire hydrants will be made by HRP and the demolition contractor in conjunction with the City of St. Louis Water Department. All permits will be procured prior to using a fire hydrant as a dust suppression or water source for the Site.

WILLCO BUILDING DEMOLITION WORK PLAN

The location of City of St. Louis fire hydrants are shown on **Figure 4-1**. There are three fire hydrants located along Grand Avenue to the east of the Site, and a single fire hydrant is located on North Spring Avenue to the west of the Site. At any one point during the demolition of the WILLCO Building, each fire hydrant or a combination of fire hydrants may be used to prevent fugitive dust from leaving the Site perimeter.

5.7 Dust Suppression Water Management

The Contractor will implement a fugitive dust suppression program in accordance with the project specifications to prevent the off-site migration of particulate matter and/or dust resulting from excavation, loading, transportation, and filling operations associated with site materials. It will also be the Contractor's responsibility to: 1) supervise fugitive dust control measures, 2) monitor airborne particulate matter and 3) coordinate with the USEPA for perimeter air monitoring. To prevent the migration of dust suppression water off the Site, Best Management Practices (BMPs) for water management will be employed at the Site.

5.7.1 MSD Owned Sewers

HRP and MSD personnel will meet at the Site to discuss which sewers and drain lines belong to the MSD and which are privately owned. MSD-owned sewers or manholes will be plugged in accordance with MSD requirements to prevent dust suppression water from migrating off-site via the MSD sewer and to prevent the build-up of solids in the bottom of manholes.

5.7.2 Private Sewers

Privately owned sewers and manholes in the WILLCO Building will be plugged using non-shrink hydraulic cement to prevent dust suppression water from migrating off-site and to prevent the build-up of solids in the bottom of manholes.

5.7.3 Surface Water

The first floor surface of the WILLCO Building is a concrete slab. To prevent surface water (sheet flow) from leaving the site during demolition activities, a series of temporary berms will be strategically placed on-site.

The berms will be constructed to direct the dust suppression water to a location for collection, sampling, possible treatment, and subsequent discharge to the publicly owned treatment works (POTW) or reuse as dust suppression water. Water will be collected, treated sampled and discharged along with all the water collected on the Site as described in **Section 5.11 – Surface Water Runoff Management**.

WILLCO BUILDING DEMOLITION WORK PLAN

5.11 Surface Water Runoff Management

Surface water management will be controlled utilizing a series of BMPs such as seeding, sodding, soil roughening, geotextiles, slit fences, etc. combined with Site Specific Water Runoff Controls such as strategically placed berms, a process water collection tank and wastewater treatment system to insure the Site can meet the POTW requirements prior to discharge. Site specific water runoff controls that are available and consist of, but are not limited to at this time, are as follows:

- Land Grading to help control surface runoff, soil erosion and sedimentation (with the potential for COC transport mechanisms);
- Semi-permanent Diversions (berms) which can be constructed by creating channels with supporting earthen ridges on the bottom sides of the slopes to collect storm water runoff and to deflect the runoff to acceptable outlets that convey it without erosion;
- Stabilized Construction Entrances to minimize the amount of sediment leaving the Site (gravel pad over filter cloth) in conjunction with vehicle/tire wash station;
- Filter Berms made up of a temporary loose gravel ridge on the roadway that diverts storm water flow from an open traffic area and acts as an efficient form of sediment control (intended for gentle slope, short life span and require maintenance due to clogging from mud/soil on tires);
- Dust control management with a dust control plan (see Sections 6.2 and 7.3).

All measures will be taken on-site to insure that all surface water, process water, and storm water is captured, collected, treated and released to the POTW in accordance with the Metropolitan Sewer District (MSD) and United States Environmental Protection Agency standards for Stockpile Management Locations.

It is expected that the greater part of the WILLCO Plastics Building will be stockpiled on-site to the west of the CBI Building across North Spring Avenue in the area identified on Figure 1-1 as "Area for Processed Material Stockpiling". The clean, stockpiled former WILLCO Building material will later be utilized as fill material on-site as required. Stockpile locations for the CBI Building will be chosen based on work flow, sequence of operations, and schedule. All stockpiles will be secured and managed so there is minimal or no migration of dust from the Site.

WILLCO BUILDING DEMOLITION WORK PLAN

6.0 DEMOLITION

The WILLCO Building will be completely demolished prior to any actions to the CBI Building. The first demolition activity will be the complete, general demolition of the WILLCO Building from the roof to the first floor slab. The demolition will start in the southeast corner of the WILLCO Building and proceed to where the WILLCO Plastic Building attaches to the CBI Building. For the exterior of the WILLCO Building and in the immediate area of demolition, the brick fascia will be stripped away to expose the building structure, wherever possible. Tracked excavators with concrete processors will raze the roof and concrete columns. The second floor slab will be demolished into manageable sizes of debris ready for processing with tracked excavators with shear hammers and grapple buckets, all of which will be schedule driven. The remaining columns will be saw cut flush with the foundation slab. The processed concrete debris will be readied for stockpiling as per this WILLCO DWP Sections 6, 7 and 8. This processed WILLCO Building material will be stored west of North Spring Avenue and be used as general onsite backfill material, where permissible and as defined by the WILLCO DWP.

The following sections describe the sequencing of demolition activities based on the following assumptions:

- Dust Suppression water is available and of adequate pressure;
- North Spring Avenue is closed to the public; and
- St. Louis Ave will be closed as needed for the demolition.

6.1 Demolition Material Management

Since it is anticipated that RC demolition debris will be re-used on-site as backfill, it will be segregated, resized, and sampled to confirm suitability for re-use. In addition, rebar may need to be addressed in the RC concrete debris. If rebar is encountered during demolition, it will be exposed and a second or third member hydraulic shear will be used to cut the rebar.). Reinforcing material to be cut from sized concrete will be cut with a cutting torch or a shear mounted on a tracked excavator, if available and applicable.

6.1.1 Feed Material

The RC demolition debris will be fed into the mobile rock crusher. The initial location of the feed pile for the crusher plant is depicted on **Figure 1-1**, Site Layout. As the demolition progresses at the Site, the mobile crusher plant may be moved to minimize the handling of the feed stock material and/or mitigate unsafe conditions at the Site.

Material will be crushed into a suitable size to use as backfill material as called for in the specifications.

WILLCO BUILDING DEMOLITION WORK PLAN

6.1.2 Stockpile Management

Since the demolition debris material coming from the WILLCO Site does not require final verification sampling, stockpile management does not apply for 75 yd³ piles (75 yd³ piles only exist as a stable, transition pile to a larger pile). However, each of the consolidated WILLCO generated debris stockpiles must not exceed 5,000 yd³ while awaiting use as general backfill material in the Die Cast Excavation Area or across the Site.

75 CY Stockpile Constructions

The stockpiles will be conical shaped with anticipated heights of 10 feet, and diameter of 28 feet. Stockpiles will be constructed by placing approximately 4 in. of sand on top of a 6-mil poly liner. The purpose of the poly liner is to keep any water that comes in contact with the crushed material from coming in contact with the ground surface. The sand layer acts as a cushioning barrier between the crushed material and the poly liner. An additional 6 mil poly liner will be placed on top of the exposed sand to minimize possible cross contamination between the crushed material and the sand. A cross section of a typical 75 yd³ stockpile is depicted on **Figure 5-3**. A 4- to 6-mil poly liner will be placed over (cover) the stockpile to prevent wind erosion and act as a rain barrier. The poly cover will be placed as to allow precipitation to shed off the pile, not be absorbed by the sand cushion and to allow the precipitation to flow into the designed *Surface Water Runoff Management impoundment(s)* (see **Section 5.11**).

Material Staging Stockpile Construction

Stockpiles will be constructed by placing approximately 4 in. of sand on top of a 6-mil poly liner. The purpose of the poly liner is to keep any water that comes in contact with the crushed material from coming in contact with the ground surface. The sand layer acts as a cushioning barrier between the crushed material and the poly liner. An additional 6 mil poly liner will be placed on top of the exposed sand to minimize possible cross contamination between the crushed material and the sand. A cross section of a typical 5,000 CY stockpile is depicted on **Figure 5-3**. A 4 to 6-mil poly liner will be placed over (cover) the stockpile to prevent wind erosion and act as a rain barrier. The poly cover will be placed as to allow precipitation to shed off the pile, not be absorbed by the sand cushion and to allow the precipitation to flow into the designed *Surface Water Runoff Management impoundment(s)* (see **Section 5.11**).

On-site Material Movement

Material being moved from the crusher to a 75 yd³ stockpile or from a 75 yd³ stockpile to a 5,000 yd³ stockpile will be moved using a combination of excavator, wheel loader and dump truck. The material will be wetted prior to disturbing to avoid the generation

WILLCO BUILDING DEMOLITION WORK PLAN

of dust. The travel path of the wheel loader or the dump truck will be wetted to avoid the generation of dust while traversing the Site. All stockpiles will be covered at the end of each shift and not uncovered unless adding additional material or sampling.

6.2 Dust Control during Demolition

Contractor will implement a fugitive dust suppression program in accordance with the project specifications to prevent the off-site migration of particulate matter and/or dust resulting from excavation, loading, transportation, and filling operations associated with site materials. It will also be the Contractor's responsibility to: 1) supervise fugitive dust control measures, 2) monitor airborne particulate matter and 3) coordinate with the USEPA for perimeter air monitoring.

The area of the Site to be used for vehicle traffic, moving stockpiles or operating in an area of the Site that is not paved or may be covered with fine material that may cause dust will be periodically wetted. It is the intent of this dust control action to avoid any fugitive dust generated from leaving the Site.

6.3 Road Closures (see CBI Demolition Work Plan)

Road closures are depicted on Figure 11-2 of the RAWP.

6.3.1 North Spring Avenue

North Spring Avenue will be closed prior to the start of demolition activities for Utility Abandonment (see **Section 2.1**). The purpose of this street closure is to allow for the unfettered access to the area beneath North Spring Avenue so the utilities (Laclede Gas, City of St. Louis Water and MSD) can be terminated properly by the demolition contractor. In addition to that, the area to the west of the CBI Building and North Spring Avenue between the alley and the fence will be utilized for the WILLCO Building as the "Area for Processed Material Stockpiling". The former ACF Laboratory Building foundation along the west side of North Spring Avenue may also be used for temporary PCB Waste Pile Storage as the demolition of the CBI Building progresses. It is anticipated that this entire area west of the CBI Building will be used for stockpiling material anticipated for re-use as backfill prior, during and after the completion of the Die Cast Area excavation activities; thus, necessitating the need to permanently close North Spring Avenue.

6.3.2 Saint Louis Avenue

Prior to the start of demolition activities for the WILLCO Plastics Building and the demolition of the south side of the CBI Building, Saint Louis Avenue will be closed to through traffic during the demolition. Barricades on St. Louis Avenue will be placed at 1.5 times the fall height of the WILLCO Plastics/CBI Building. Saint Louis Avenue will

WILLCO BUILDING DEMOLITION WORK PLAN

be re-opened once the WILLCO Plastics Building and southern portion of the CBI Building has been demolished and is no longer a safety issue for vehicular or foot traffic.

7.0 CRUSHER OPERATIONS

In order to reutilize the demolished RC debris and potentially minimize the handling of the feed stock material, the material will be resized using a mobile crusher.

7.1 Crusher Location

The initial on-site location of the mobile crusher is depicted on **Figure 1-1**, Site Layout. This location was selected to minimize the distance between the generation point of feed material and the crusher hopper. As previously stated in **Section 6.1.1**, the location of the crusher may be moved as the demolition of the WILLCO Building progresses to keep the generation point of feed material as close as possible to the crusher hopper.

7.2 Operations

Feed material will be placed in the hopper and crushed to meet the desired particle size for use as backfill. As feed material is placed in the hopper a magnetic system will remove any extraneous rebar that was contained in the feed material. This extraneous metal will be segregated, sampled as required, and categorized for proper disposal. The material will be resized, sampled and stockpiled.

Any blockage or jamming of the crusher will require the crusher to be de-energized while the blockage or jam is cleared and only re-energized when the blockage or jam is cleared and any safety devices are re-installed as designed (it must be noted that all safety procedures must be followed and documented, including, but not limited to: all Lock Out/Tag Out Procedures, mechanical de-energizing procedures, etc.). **Only qualified personnel will operate the crusher plant.** As qualified personnel will be operating mechanical equipment on a Superfund Site known to contain hazardous chemicals, minimum training requirements include, but are not limited to; 29CFR1910.120 training (40-Hour HAZWOPER) and OSHA 10-Hour Construction Safety. All subcontractor workers will be required to have the appropriate level of HAZWOPER training for the task to be performed (see above).

Personnel operating the crusher will be required to wear hearing protection as a best management practice. The average noise level generated from a typical jaw type crusher is 80 A-weighted decibels (dbA). If the noise level of the particular crusher plant utilized at the Site has a noise level in excess of 85 dbA, personnel in the affected area will be required to wear hearing protection. It is not anticipated that the noise generated from crusher operations will adversely affect nearby businesses or residents.

7.3 Dust Control

Dust control on a crusher is accomplished by placing water misting systems at the point of dust generation. There are three main points of dust generation on a typical jaw or cone type crusher; the feed hopper/crusher, the point of crushed material dropping onto the conveyor/the conveyor length of travel and finally the end of the conveyor or material drop point. . Contractor shall implement a fugitive dust suppression program in accordance with the project

specifications to prevent the off-site migration of particulate matter and/or dust resulting from excavation, loading, transportation, and filling operations associated with site materials.

Most mobile crusher plants do not come standard with water misting systems installed, as this feature is not an integral part of the crusher plant. Therefore most water misting systems must be retro-fitted to comply with local air/dust emission standards. The crusher plants are designed to crush slightly wet to moist material but not sticky.

There is a balance point for the amount of water being used for dust suppression and the generation of sticky material (mud). Every effort will be made to fine tune the dust suppression system to minimize fugitive dust from leaving the Site. If the water misting system is not capable of preventing fugitive dust from leaving the Site, additional measures will be employed to prevent fugitive dust from leaving the Site. Additional measures may be; not to perform crusher operations during high winds, perform water misting adjacent to the crusher in the area of the fugitive dust generation to “knock” it down before leaving the Site and employing heavy plastic or rubber covers over the conveyor and the material drop point.

8.0 TRANSPORTATION AND DISPOSAL

Demolition debris that is not suitable reuse as backfill on Site will be transported off-site to the appropriate disposal facility. Transportation conveyances will be inspected prior to loading to ensure they are in good working order. Trucks with obvious safety defects, such as bald tires or leaking fluid, shall not be loaded or utilized and will not be allowed back onsite until defects are corrected. A vehicle inspection will be documented for each transportation conveyance. In addition, a tracking sheet will be developed to identify the date, time, weight/volume, waste/material, trucking company, driver, and vehicles used for each trip.

A discussion for the traffic routes is included in **Section 11 of the RAWP**. This section discusses the road closures and traffic routes specific to the CBI Building demolition.

8.1 Material Loading

8.1.1 Off-site Transportation

Demolition debris not suitable for reuse as backfill generated from either the Pre-Demolition activities or the structural demolition of the CBI Building will be loaded in to permitted trucks for transport off-site and disposal at an appropriately regulated landfill. Material will be loaded in a manner to minimize spillage on the outside of the conveyance and minimize the generation of dust. This upfront care taken to load the conveyance will minimize any cleaning of the conveyance body or tires prior to further movement on the Site and subsequent transportation to the off-site disposal facility. A water mist will be used if material presents a fugitive dust generation issue. If waste material is noticed on the outside of the truck, it will be removed by dry wiping or by wet method (truck wash) to prevent the spread of demolition debris off-site

8.1.2 On-Site Transportation

Demolition debris will be moved from the point of structural demolition to the sizing area to be re-sized by mechanical means prior to placement in the crusher feed pile. Dust suppression measures will be utilized during all sizing and demolition operations to prevent fugitive dust from leaving the Site. Crushed reinforced concrete is expected to be moved either by wheel loader or tandem truck on-site to the sample piles for sampling and storage. The travel path of the loader or tandem truck will be wetted to prevent the generation of dust. Care will be taken not overload the loader bucket or the tandem truck to avoid spillage of material along the travel path.

Material that is determined to be unsuitable for reuse as backfill will be handled as described above in Section 10.1.1. Material that is suitable for reuse as backfill will be moved to a reuse stockpile for storage until used as backfill. Material will be loaded into the on-site transportation conveyance in such a manner to minimize spillage on the outside of the conveyance and minimize the generation of dust. This upfront care taken to load the conveyance will minimize any cleaning of the conveyance body or

tires prior to further movement on the Site and subsequent transportation to the off-site disposal facility.

8.2 Truck Scale

To ensure compliance with local, state and federal weight regulations, trucks loaded with demolition debris will be weighed before leaving the Site. On-site scales will be utilized to ensure trucks do not exceed 72,000 lbs or the maximum rating for the specific type of truck. Trucks that are overweight will be directed back to the material loading area to have excess material removed. The equipment operator and truck driver will communicate during loading operations to avoid overloading that would require removal of excess material from the truck. After initial setup, the truck scales will be calibrated by the contractor. The scales will be maintained and re-calibrated based on the manufacturer's recommendations. Additionally, weight tickets from the disposal facility will be used to verify the accuracy of outgoing loads. The scales will be inspected and cleaned as necessary to ensure proper operation. The contractor will perform calibration checks at least weekly to ensure the scales are within the manufacturer's tolerance limits. Scale calibration logs will be used to document scale calibration, inspections, and weekly calibration checks.

8.3 Visual Inspection

Prior to leaving the site trucks shall be inspected to ensure proper loading, covering/sealing, placarding and manifesting. Trucks will be visually inspected to ensure no debris or material is present that could impact public health and safety and/or the environment. Prior to leaving the site, each truck load will be covered with a tarp or other material to prevent material spreading and/or spilling while enroute to disposal facility. Trucks with debris or other material on the outside of the truck body or tires will be cleaned via a dry method, wiping or brushing. If this method is not successful, the truck will be directed to the truck wash for cleaning prior to leaving Site.

8.4 Truck Wash

Trucks that have debris or material that cannot be dry brushed off shall utilize the onsite truck wash before leaving the site and be re-inspected to verify the effectiveness of the cleaning procedures. The cleaning procedure will include a double-wash double-rinse of all areas where potential contact with PCBs may have occurred. The truck wash area will be constructed to contain the cleaning water and to prevent any demolition debris from contacting non-impacted areas of the site. Trucks will not be allowed to leave the designated work zone or cleaning area until a designated representative has verified all material has been removed from the tires and outside of truck bed.

8.5 Public Road Inspection

Public streets utilized by the trucks transporting material for off-site disposal will be inspected at least daily in order to ensure that the trucks are being adequately cleaned and that no spillage is occurring. The street inspection will be conducted near the end of the daily work shift, with more frequent inspections to occur if spills of impacted material are documented in public streets. Any identified spills will be cleaned up immediately. The daily inspection will be documented in a log book to be maintained at the site.

Appendix A

Proposed Project Schedule